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EXAMINER

BAKER, CHARLOTTE M

ART UNIT PAPER NUMBER

2626

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/897,768

Applicant(s)

ZAKLIKA ET AL.

Examiner

Charlotte M. Baker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2001 and 03 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. There are no flow charts to support method claims must be shown or the feature(s) canceled from the claim(s). There are no apparatus drawings to support the computer readable medium claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The amendment filed on 03/29/2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: a computer readable medium having computer executable instructions and a first or second subset of pixels (claims 30-37).

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 30-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no disclosure regarding a computer readable medium having computer executable instructions. Also, there is no disclosure for a first or second subset of pixels.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claim 1-15, 21-24 and 27-37 are rejected under 35 U.S.C. 102(b) as being unpatentable by Lin (5,812,286).

Regarding claim 1: Lin discloses averaging at least two color channels (Fig. 1, step 20) in regions near the minimum of histograms of the at least two color channels (Fig. 4); selecting the smallest of the average color values as a black point (col. 2, ln. 30-31 and col. 3, ln. 3-4); averaging at least two color channels (Fig. 1, step 20) in regions near the maximum of the histograms of the at least two color channels (Fig. 4) and selecting the largest of the average color values as a white point (col. 2, ln. 31-32 and col. 2, ln. 66 through ln. 1); correcting the at least two color channels (Fig. 1, step 20) by adjusting average color values (col. 2, ln. 30-32) to match the values of the black point and the white point to form corrected image data (col. 2, ln. 35-40).

Regarding claim 2: Lin satisfies all the elements of claim 1. Lin further discloses imposing a clipping limit on the histogram (col. 2, ln. 62-65).

Regarding claim 3: Lin satisfies all the elements of claim 2. Lin further discloses wherein the clipping limit is imposed on each of the at least two color channels so that no more than a predetermined percentage of pixels are identified as black or white pixels (col. 2, ln. 62-65).

Regarding claim 4: Lin satisfies all the elements of claim 1. Lin further discloses wherein regions of the histogram near the minimum color values of histograms for at least two colors are selected based on the darkest non-black pixels in the histogram of the image (col. 2, ln. 30-31 and col. 2, ln. 62-65 and col. 3, ln. 2-5).

Regarding claim 5: Lin satisfies all the elements of claim 1. Lin further discloses wherein regions of the histogram near the maximum color values of histograms for at least two colors are

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selected based on the lightest non-white pixels in the histogram of the image (col. 2, ln. 32 and col. 2, ln. 62-65 and col. 2, ln. 66 through ln. 2).

Regarding claim 6: Lin satisfies all the elements of claim 1. Lin further discloses wherein an original position and a final position of smallest color averages and an original position and a final position of largest color averages define two points (col. 2, ln. 30-32 and col. 2, ln. 66 through ln. 10) through which a linear interpolation is used to create a look-up table for correcting color data (Fig. 2, step 30).

Regarding claim 7: Lin satisfies all the elements of claim 6. Lin further discloses where conceptual movement of smallest color averages in the histogram (col. 2, ln. 62-65) is equal to the smaller of that required to achieve alignment with a black point (col. 3, ln. 2-5) and that required to achieve a predetermined level of clipping (col. 2, ln. 62-65) and conceptual movement of largest color averages (col. 2, ln. 62-65) is equal to the smaller of that predetermined level of clipping (col. 2, ln. 62-65).

Regarding claim 8: Lin satisfies all the elements of claim 6. Lin further discloses wherein smallest color averages are aligned with the black point (col. 3, ln. 2-5) and largest color averages are aligned with the white point (col. 2, ln. 66 through ln. 2) and the white and black points are conceptually moved towards each other (col. 3, ln. 5-13), maintaining the alignment until clipping all colors is reduced to no more than a predetermined amount (col. 2, ln. 62-65).

Regarding claim 9: Lin satisfies all the elements of claim 1. Lin further discloses replacing the adjusted brightness distribution for the corrected image data with the original brightness distribution for the color image after adjustment of colors (Fig. 6 and Fig. 8).

Regarding claim 10: Lin satisfies all the elements of claim 3. Lin further discloses replacing the adjusted brightness distribution for the corrected image data with the original brightness distribution for the color image after adjustment colors (Fig. 6 and Fig. 8).

Regarding claim 11: Lin satisfies all the elements of claim 7. Lin further discloses replacing the adjusted brightness distribution for the corrected image data with the original brightness distribution for the color image after adjustment colors (Fig. 6 and Fig. 8).

Regarding claim 12: Lin satisfies all the elements of claim 8. Lin further discloses replacing the adjusted brightness distribution for the corrected image data with the original brightness distribution for the color image after adjustment colors (Fig. 6 and Fig. 8).

Regarding claim 13: Lin satisfies all the elements of claim 9. Lin further discloses wherein brightness is computed in a color space in which the brightness approximately matches human perception (rendered as white in the RGB device space of a printer or a monitor; it is inherent that brightness approximately matches human perception, col. 3, ln. 1-2).

Regarding claim 14: Lin satisfies all the elements of claim 10. Lin further discloses wherein brightness is computed in a color space in which the brightness approximately matches human perception (rendered as white in the RGB device space of a printer or a monitor; it is inherent that brightness approximately matches human perception, col. 3, ln. 1-2).

Regarding claim 15: Lin satisfies all the elements of claim 11. Lin further discloses wherein brightness is computed in a color space in which the brightness approximately matches human

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perception (rendered as white in the RGB device space of a printer or a monitor; it is inherent that brightness approximately matches human perception, col. 3, ln. 1-2).

Regarding claim 21: Lin satisfies all the elements of claim 1. Lin further discloses wherein at least three color channels are averaged (Fig. 1, step 20) in regions near the minimum and maximum color values of histograms of the at least three color channels (Fig. 4).

Regarding claim 22: Lin satisfies all the elements of claim 21. Lin further discloses wherein averages of maximum values and averages of minimum values for all three colors are compared (col. 2, ln. 66 through ln. 13).

Regarding claim 23: Lin satisfies all the elements of claim 22. Lin further discloses wherein the largest of the average maximum values of color histograms determines the amount of conceptual movement of the average maximum values for all colors towards the white point (col. 2, ln. 66 through ln. 2).

Regarding claim 24: Lin satisfies all the elements of claim 23. Lin further discloses wherein the smallest of the average minimum values of color histograms determines the amount of conceptual movement of the average minimum values for all colors towards the black point (col. 3, ln. 2-5).

Regarding claim 27: Lin satisfies all the elements of claim 9. Lin further discloses wherein brightness is computed according to a linear combination of red, green, and blue data (col. 2, ln. 66 through ln. 13).

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Regarding claim 28: Lin satisfies all the elements of claim 10. Lin further discloses wherein brightness is computed according to a linear combination of red, green, and blue data (col. 2, ln. 66 through ln. 13).

Regarding claim 29: Lin satisfies all the elements of claim 11. Lin further discloses wherein brightness is computed according to a linear combination of red, green, and blue data (col. 2, ln. 66 through ln. 13).

Regarding claim 30: Arguments analogous to those stated in the rejection of claim 1 are applicable. A recording medium that stores instructions for performing steps for correcting a color image is inherently taught as evidenced by the microprocessor shown in Fig. 1 and various memories stored therein.

Regarding claim 31: Examiner is interpreting a subset of pixels to be pixels contained in each color (R,G,B). Lin discloses identifying a first subset of pixels having color values located substantially within a defined range for a first color channel (col. 2, ln. 66 through ln. 13); computing a first average color value for the first subset of pixels for the first color channel as a first reference point (col. 3, ln. 1-3 and Fig. 2, step 20); and adjusting a second average color value for the first subset of pixels for a second color channel towards the first reference point (col. 2, ln. 66 through ln. 13).

Regarding claim 32: Lin satisfies all the elements of claim 31. Lin further discloses identifying a second subset of pixels having color values located substantially within a second defined range for a selected one of two or more color channels (col. 2, ln. 66 through ln. 13); computing a second subset first average color value for the second subset of pixels for the selected one of the

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two or more color channels as a second reference point (col. 3, ln. 1-3 and Fig. 2, step 20); and adjusting a second subset second average color value for the second subset of pixels for a second selected one of the two or more color channels towards the second reference point (col. 2, ln. 66 through ln. 13).

Regarding claim 33: Lin satisfies all the elements of claim 32. Lin further discloses wherein the selected one of the two or more color channels can be the same as one of the first or second color channels (col. 2, ln. 66 through ln. 13).

Regarding claim 34: Lin satisfies all the elements of claim 32. Lin further discloses wherein the second selected one of the two or more color channels can be the same as one of the first or second color channels (col. 2, ln. 66 through ln. 13).

Regarding claim 35: Lin satisfies all the elements of claim 32. Lin further discloses constructing a look-up table between a point defined by the first average color value and the first reference point, and a point defined by the second subset second average color value and the second reference point (Fig. 2, step 30); and applying the look-up table to modify the color values in the image (Fig. 2, step 40).

Regarding claim 36: Arguments analogous to those stated in the rejection of claim 31 are applicable. A recording medium that stores instructions for performing steps for correcting a color image having two or more color channels is inherently taught as evidenced by the microprocessor shown in Fig. 1 and various memories stored therein.

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Regarding claim 37: Lin satisfies all the elements of claim 36. Arguments analogous to those stated in the rejection of claim 32 are applicable. A recording medium that stores instructions for performing steps for correcting a color image having two or more color channels is inherently taught as evidenced by the microprocessor shown in Fig. 1 and various memories stored therein.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Shiraiwa et al. (6,160,579).

Regarding claim 16: Lin satisfies all the elements of claim 1. Lin further discloses wherein after color adjustment (col. 2, ln. 30-32).

Lin fails to specifically address illuminant color temperature correction.

Shiraiwa et al. disclose a selected illuminant color temperature correction is applied to digital image data of the color image (Figs. 1 and 2, and col. 1, ln. 54 through ln. 18).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include Illuminant color temperature correction after color adjustment to provide a more accurate representation of the original image.

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Regarding claim 17: Lin satisfies all the elements of claim 3. Lin further discloses wherein after color adjustment (col. 2, ln. 30-32).

Shiraiwa et al. disclose a selected illuminant color temperature correction is applied to digital image data of the color image (Figs. 1 and 2, and col. 1, ln. 54 through ln. 18).

Regarding claim 18: Lin satisfies all the elements of claim 7. Lin further discloses wherein after color adjustment (col. 2, ln. 30-32).

Shiraiwa et al. disclose a selected illuminant color temperature correction is applied to digital image data of the color image (Figs. 1 and 2, and col. 1, ln. 54 through ln. 18).

Regarding claim 19: Lin satisfies all the elements of claim 8. Lin further discloses wherein after color adjustment (col. 2, ln. 30-32).

Shiraiwa et al. disclose a selected illuminant color temperature correction is applied to digital image data of the color image (Figs. 1 and 2, and col. 1, ln. 54 through ln. 18).

Regarding claim 20: Lin satisfies all the elements of claim 9. Lin further discloses wherein after color adjustment (col. 2, ln. 30-32).

Shiraiwa et al. disclose a selected illuminant color temperature correction is applied to digital image data of the color image (Figs. 1 and 2, and col. 1, ln. 54 through ln. 18).

10. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Kang et al. (US20020063666).

Regarding claim 25: Lin satisfies all the elements of claim 1.

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Lin fails to specifically address a look-up table of color temperatures.

Kang et al. disclose wherein a separate look-up table of color temperatures in a three dimensional color space is provided, and temperature corrections for images are identified, and temperature corrections are added to the corrected image data (par. 77 and par. 79).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a separate look-up table of color temperatures in order to improve quality of the displayed image.

Regarding claim 26: Lin satisfies all the elements of claim 22.

Kang et al. disclose wherein a separate look-up table of color temperatures in a three dimensional color space is provided, and temperature corrections for images are identified, and temperature corrections are added to the corrected image data (par. 77 and par. 79).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlotte M. Baker whose telephone number is 571-272-7459.

The examiner can normally be reached on Monday-Friday 8:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on 571-272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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